

FT 50 RLA 70 / 100 / 220

Distance sensor with RS485 interface



PRODUCT HIGHLIGHTS

- Largely independent of target object reflectivity (highly reflective and glossy objects)
- RS485 interface for parameterisation and measurement value output
- High resolution
- Rapid response time
- 2 switching outputs, 1 analogue output 4 ... 20 mA
- High long-term stability and low temperature effects

Optical data		Functions	
Operating range	30 ... 100 mm / 70 ... 170 mm / 80 ... 300 mm ¹	Indicator LED, green	Operating voltage indicator
Measurement range	70 mm, 100 mm, 120 mm	Indicator LED, yellow	Switching output indicator
Type of light	Laser, red, 650 nm	Scanning distance adjustment	Via Teach-in button and control input
Laser Class (IEC 60825-1)	1	Adjustment possibilities	N.O. / N.C. via Teach-in button and control input
Resolution	< 0.1 % of operating range end-value (0.1 mm / 0.17 mm / 0.3 mm) ²	Default settings	Button lock via control input
Linearity	< 0.25 % of operating range end-value (0.25 mm / 0.42 mm / 0.75 mm)		Max. scanning distance and N.O.
Repeatability	< 0.25 % of measurement value		
Electrical data		Mechanical data	
Operating voltage, +U _B	18 ... 30V DC	Dimensions	50 x 50 x 17 mm
No-load current, I ₀	≤ 40 mA	Enclosure rating	IP 67 ³
Output current, I _e	≤ 100 mA	Material, housing	ABS, impact-resistant
Protective circuits	Reverse-polarity protection, U _B / short-circuit protection, Q (not Type S1)	Material, front screen	PMMA
Protection Class	2	Type of connection	See selection table
Power On Delay	≤ 300 ms	Ambient temperature: operation	-10 ... +60 °C
Switching output, Q ₁ / Q ₂	PNP	Ambient temperature: storage	-20 ... +80 °C
Output function	N.O./N.C.	Weight	43 g
Analogue output	4 ... 20 mA	Vibration and impact resistance	EN 60947-2
Temperature drift	< 0.02 % of operating range end-value / K		
Load	≤ 500 Ω		
Switching frequency, f (ti/tp 1:1)	≤ 1000 Hz		
Response time	≥ 0.4 ms (when mean value formation = off) / 4 ms / 40 ms to end-value		
Serial interface	See selection table		

¹ Reference material: Kodak grey, 18 % ² Smallest measurable change ³ With connected IP 67 plug

Scanning distance	Measurement range	Resolution	Linearity	Serial interface	Type of connection	Part number	Article number
30 ... 100 mm	70 mm	0,1 mm	0,25 mm	–	Plug, M12x1, 8-pin	FT 50 RLA-70-L8	574-41018
30 ... 100 mm	70 mm	0,1 mm	0,25 mm	RS485	Plug, M12x1, 8-pin	FT 50 RLA-70-S1L8	574-41019
70 ... 170 mm	100 mm	0,17 mm	0,42 mm	RS485	Plug, M12x1, 8-pin	FT 50 RLA-100-S1L8	574-41033
80 ... 300 mm	220 mm	0,3 mm	0,75 mm	–	Plug, M12x1, 8-pin	FT 50 RLA-220-L8	574-41014
80 ... 300 mm	220 mm	0,3 mm	0,75 mm	RS485	Plug, M12x1, 8-pin	FT 50 RLA-220-S1L8	574-41015

Plug connection	Type	X (distance, receiver)
	153-00716	FT 50 RLA 70 FT 50 RLA 100 FT 50 RLA 220
		29,4 mm
		32,5 mm
		32,5 mm

Connection, 8-pin	Type	Pin 1	Pin 5
	154-00127	RS485 Y/A	RS485 Z/B
	FT 50 RLA -S1L8. FT 50 RLA -L8.	-	-

Characteristic analogue curve	Light spot geometry																																	
<p>Operating range (default setting)</p> <p>OK LED (green) (Good Target) On Off</p> <p>Analogue output (invertible) 20 mA 4 mA</p> <table border="1"> <tr> <td>FT 50 RLA 70</td> <td>30 mm</td> <td>100 mm</td> </tr> <tr> <td>FT 50 RLA 100</td> <td>70 mm</td> <td>170 mm</td> </tr> <tr> <td>FT 50 RLA 220</td> <td>80 mm</td> <td>300 mm</td> </tr> </table>	FT 50 RLA 70	30 mm	100 mm	FT 50 RLA 100	70 mm	170 mm	FT 50 RLA 220	80 mm	300 mm	<p>155-00271</p> <table border="1"> <thead> <tr> <th>FT 50 RLA</th> <th>70 ...</th> <th>100 ...</th> <th>220 ...</th> </tr> </thead> <tbody> <tr> <td>A</td> <td>30</td> <td>70</td> <td>80</td> </tr> <tr> <td>B</td> <td>100</td> <td>170</td> <td>300</td> </tr> <tr> <td>C</td> <td>1.5 x 3</td> <td>1.5 x 3.5</td> <td>1.5 x 3.5</td> </tr> <tr> <td>D</td> <td>1.5 x 3.25</td> <td>1.7 x 3.9</td> <td>2 x 4.5</td> </tr> <tr> <td>X</td> <td>29,4</td> <td>32,5</td> <td>32,5</td> </tr> </tbody> </table> <p>155-00269</p>	FT 50 RLA	70 ...	100 ...	220 ...	A	30	70	80	B	100	170	300	C	1.5 x 3	1.5 x 3.5	1.5 x 3.5	D	1.5 x 3.25	1.7 x 3.9	2 x 4.5	X	29,4	32,5	32,5
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Installation	Accessories				
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